REMARKS

Favorable reconsideration is requested in view of the following remarks. Claims 1-8 and 12-16 remain pending in the application.

Claim rejections - 35 U.S.C. § 103

Claims 1-8 and 12-16 are rejected as unpatentable over Mori et al. (Chem. Pharm. Bull., 1983) in view of Kosaka (US 2002/0037591). Applicants respectfully traverse the rejection.

Claim 1 recites that the test piece for creatinine measurement includes a compound expressed by the formula (1) and a transitional metal or its salt that forms a colored complex with the compound, the transitional metal being Pd(II). The test piece recited in claim 1 can be used to evaluate the presence or absence of creatinine and to determine the amount of creatinine in a sample based upon the degree of inhibition of the colored complex formation by creatinine (see page 3, lines 7-12 of the specification). Advantageously, the test piece recited in claim 1 avoids the serious problem of the liquid waste treatment involved with conventionally used chemical methods such as the Jaffe method, as strong alkaline reagents are not used, and does not involve the use of expensive enzymes or a special facility for microdeterminations as in the enzymatic method (see page 1, line 36 to page 2, line 8 of the specification). Moreover, the test piece recited in claim 1 allows measurement of the creatinine, for example, at room temperature, and thus, unlike conventional enzymatic methods, it is not necessary to adjust the reaction temperature at an optimum temperature of the enzyme, so that the reaction time can be reduced (see page 3, lines 12-17 of the specification). Accordingly, the creatinine measurement can be performed quickly and easily (*Id.*).

Mori is related to a method for measuring creatinine (abstract). Mori indicates that routine analysis for the determination of creatinine involves a method that utilizes the Jaffe reaction (page 1389, first paragraph). Mori notes that although such a method is simple and rapid, it suffers from interference by Jaffe chromogens, such as proteins, and therefore, it is necessary to remove these interfering substances by ether extraction or preliminary treatment with iodine (*Id.*). Mori further indicates that such a method is unsatisfactory as regards to sensitivity (*Id.*). To address these issues, Mori teaches the use of o-hydroxyhydroquinonephthalein (Qn.Ph.)-palladium (II)[Pd(II)] complex in the presence of

polyvinyl alcohol (PVA) and sodium dodecyl sulfate (SDS) in weakly acidic media (abstract; page 1389, first paragraph under Experiment heading). In particular, Mori teaches experiments conducted in a buffer solution with a pH of 5.5 (page 1389, first paragraph under Experiment heading). The experiments were conducted with various substances to examine their effects in terms of interference on binding between Qn.Ph.-Pd(II) and creatinine (page 1390, seventh paragraph). The experimental results as shown in Table 1 on page 1391 indicate that the effects of other substances are dependent upon the type and the amount of the substance present.

It can be clearly understood from this description that Mori is directed to addressing analytical non-specificity, i.e., inability to measure solely creatinine, of routine methods and is focused on the detection of creatinine, which is a non-protein waste product of creatine phosphate metabolism, that protein is one of the components that interferes with the binding between Qn.Ph.-Pd(II) complex and creatinine in a weakly acidic media, and that the reference aims to find the degree of interference the protein has on the binding between Qn.Ph.-Pd(II) complex and creatinine.

Kosaka is directed to measuring protein in a liquid sample such as urine (page 1, paragraph [0014]). Kosaka indicates that the prior art teaches colorimetric method for the determination of a trace protein using a polyhydroxybenzene sulfonphtalein dye and/or polyhydroxybenzene phthalein dye – tungsten complex in an acidic environment (page 1, paragraph [0012]). Kosaka also indicates that the prior art teaches metals to be screened for polyhydroxybenzene sulfonphtalein dye and/or polyhydroxybenzene phthalein dye include Mo(VI), Bi(III), Al(III), Fe(III), U(VI), Zr(IV), Sb(III), W(VI), Ce(III), Sn(IV), Zn(II), Mn(II), Hg(II), Ag(I) and Cd(II) (page 1, paragraph [0013]). Kosaka teaches that their invention provides a novel means of detecting a trace amount of protein in a sample by using an indicator reagent composition containing indium and a dye or pigment that is capable of forming a complex with indium in acidic pH (page 2, paragraphs [0015-0017] and [0029], page 3, paragraphs [0030], [0038], [0041] and page 4, paragraphs [0043] and [0045]). The reference indicates that acidic buffers that can keep pH value of preferably from 2.2 to 2.7 are used (*Id.*).

It can be clearly understood from this description that Kosaka is directed to quantifying a trace protein, as opposed to creatinine, and that the components in Kosaka's reagent is specific in

terms of the metal utilized, namely indium, and the environment in which it is used, namely an acidic, as opposed to a weakly acidic, environment.

The rejection contends that it would have obvious, as motivated by Kosaka, to substitute the Qn.Ph. of Mori with the pyrocatechol violet of Kosaka in order to provide a well known indicator capable of forming a complex with a transition metal ion that binds to a protein to shift the wavelength and be able to detect a trace amounts of the protein. However, the references teach completely different detection mechanisms in completely different environments for measuring completely different substances. As indicated above, Mori teaches that the Qn.Ph-Pd(II) complex specifically binds to creatinine in a weakly acidic environment. Creatinine is a non-protein waste product of creatine phosphate metabolism. On the other hand, Kosaka teaches that compounds that are specific for indium, such as Qn.Ph. can be used so that Qn.Ph.-indium, as opposed to Qn.Ph.-Pd(II), complex can bind with protein, as opposed creatinine, in an acidic, as opposed to a weakly acidic, environment. Nothing in either reference provides any reasonable technical basis for combining any of the materials of Kosaka with that of Mori. In fact, Mori aims to exclude measurement of the substance to be measured in Kosaka, and therefore, leads away from using the materials in Kosaka. Accordingly, claim 1 and the dependent claims therefrom are patentable over the references taken alone, or together.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested. Any questions or concerns regarding this communication can be directed to the attorney-of-record, Douglas P. Mueller, Reg. No. 30,300, at (612) 455.3804.

Respectfully submitted,

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